Research Article

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Association of psychiatric morbidity with quality of life among late adolescent girls: exploring the iceberg

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ABSTRACT

Background: Adolescents constituting major chunk of the population, though seem to be healthy group, and are affected by various ailments among which mental disorders constitutes considerable proportion which often begins in adolescence is both preventable and treatable. Less described in the literature is the association between quality of life and a wide range of psychopathology in adolescents especially among girls and henceforth this study was conducted to determine the association between psychiatric disorders and quality of life among late adolescent girls.

Methodology: This cross-sectional study was conducted in a randomly selected pre-university and degree college in Mysore city, Karnataka, India for a period of one year among adolescent girls 16-19 years. Sample size estimated was 683. Mini international neuropsychiatric interview, Version 6.0 was used to diagnose psychiatric morbidity and WHOQOL BREF Questionnaire was used to collect data on Quality of life. Data collected was analyzed using SPSS V.22 .Proportions was calculated, Mann-Witney U Test was used to see the association of psychiatric morbidity with Quality of life. Binary logistic regression was used to determine the independent predictability of psychiatric morbidity by various domains of quality of life.

Results: Analysis showed that overall prevalence of mental health disorders was found to be 15.5 % with major depressive disorder being the most common accounting to 37% There was significant association seen between psychiatric disorder with overall quality of life and physical, psychological, social and environmental domains of QOL (p<0.05). On binary logistic regression overall quality of life was found to be independent predictor of psychiatric morbidity.

Conclusion: Overall quality of life was found to be independent predictor of psychiatric morbidity.

Key words: Adolescent girls, Mental disorder, Quality of life, Mini international neuropsychiatric interview, Version 6.0, WHOQOL- 100 questionnaire

INTRODUCTION

Adolescence is the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to 19 WHO. According to ICF international, demography and health survey the youth (15 to 24 yrs) constituted 1809.6 million (25%) in the world's population in 2013 and it is projected that by 2050 it will be 1884.9 million (20%). 2011 census states that adolescents form 21% of our population. There are

currently 583.9 million girls in the world aged 10-19 years, comprising 8.5% of the global population, of which more than 70% of them belong to developing countries. Between 2010 and 2025 the global population of girls aged 10-19 years is forecasted to grow by more than 23 million (UN department of economic and social welfare 2011).

Though this age seems to be apparently healthy in terms of physical health, the issue is not same with mental morbidity. Various studies have shown that most of the psychiatric disorders detected in adulthood often begin in childhood or adolescence. Mental health, like other aspects of health, can be affected by a wide range of socioeconomic factors that need to be addressed through comprehensive approach.

WHO theme 2001 said mental health: stop exclusion, dare to care. It's been 13 years since then and according to the present estimates by WHO, mental illnesses are the leading causes of disability adjusted life years (DALYs) worldwide. Worldwide, the first main cause of YLDs for 10-24 year olds were found to be neuropsychiatric disorders (45%).⁴

Furthermore, many of the leading causes of DALY that are not directly due to mental disorder have mental-health dimensions. For example, young people with mental disorders are at a higher risk of contracting HIV/AIDS, Young people with learning difficulties or schizophrenia are more likely to develop behavior or emotional disorders.

They are at increased risk of substance abuse, suicide, injuries, violence, educational under achievements, loss of employment, increased health care cost etc. Studies so far conducted in India to know the prevalence of psychiatric disorders show a prevalence ranging from 95 to 165 per 1000 population. Good evidence is available in support of a multifactorial cause for mental disorders in young people.

Quality of life has a significant association with respect to mental disorders. Poverty and social disadvantage are strongly associated with mental disorder. Evidence suggests that this association is complex and bidirectional: growing up in poor household increases the risk of exposure to adversities such as scarcity of food, poor nutrition, violence, inadequate education, academic pressure, cultural factors and living in a neighborhood characterized by absence of social networks, all of which are risk factors for mental disorder. There are hardly any studies conducted abroad and in India which have made an effort to know the association of psychiatric disorders with quality of life. Hence, with the above objective in mind this study was conducted to know the association of quality of life and psychiatric disorders among late adolescent girls.

METHODS

This cross-sectional study was conducted in Mysore for a period of one year. Sample size was estimated using the formula zpq/l^2 with z = 1.96, p (prevalence)=20% from previous study⁵, q (100-p)=80% and l = relative precision taken as 15% of p i.e 3.Sample size was estimated to be 683 which was rounded to 700.

Multistage sampling method was followed,

First stage includes line listing of all private universities (PU) and degree colleges in Mysore city under JSS Mahavidhyapeeta were done and randomly one college was selected from the list by lottery method.

Second stage includes the collection of selected college, information regarding the number of sections in 1st and 2nd year of Pre- University, and 1st and 2nd year of degree and also information was collected as to how many of these classes belonged to arts and science. Of them 2 classes were selected for each arts and science subjects at every level (i.e. 1st, 2nd PU and 1st, 2nd Degree) again by using lottery method.

Third stage includes personal interview of selected class's students to screen them for mental disorders and the WHOQOL-100 Questionnaire was administered to all the students to collect information regarding quality of life.

Adolescent girls belonging to the age group of 16 to 19 years were included. This age group was particularly selected as, it represents more vulnerable portion of adolescents who encounter problems due to excess parental and peer pressure, relatively less number of studies have included this age group as study population and they are more mature to answer the personal interview conducted while assessing the mental health status in this particular study.

MINI KID Questionnaire V 6.0 was used to screen all the study subjects for mental disorders which are specifically designed for assessing mental health status of children and adolescents. Diagnosis included in the present study under M.I.N.I KID were Major depressive disorder, Dysthymia, Mania, Panic disorder, Agoraphobia, Obsessive compulsive disorder, Social phobia, Psychotic disorder, Post-traumatic stress disorder, Bulimia nervosa, Anorexia nervosa, Generalized anxiety disorder. All of these adolescent girls were administered the WHOQOL-100 proposed by WHO to assess the quality of life. Information regarding socio-demographic variables was collected by semi-structured questionnaire.

Socio-economic status of family was categorized according to Modified B.G Prasad classification, which was standardized to the time of study using the then Consumer Price Index (Ministry of statistics and program implementation, Government of India). Other Independent variables which were collected includes the subject which they were pursuing, whether they belonged to urban or rural background, presence of Siblings, Order birth Place present of and of residence (Hostelite/Localite).

Confidentiality and voluntariness were the guiding principles of the study. Informed consent was obtained from each of the study participant. Approval from Institutional Ethics Committee was obtained.

Statistical analysis

Data thus obtained was coded and entered into SPSS version 22 and analyzed using the same. Descriptive statistics, viz. percentages and the inferential statistics tests like Mann-Witney U Test was applied. For analyzing quality of life Separate scores were obtained for the overall quality of life, physical domain, psychological domain, level of independence, social relations, environmental domain and spiritual domain of quality of life and these raw scores were transformed to the scores ranging from 0-100 before analysis as per the instructions given in the WHO manual for administering and scoring WHOQOL-100 questionnaire.

Then comparison was done between the various domains of quality of life with those who had psychiatric morbidity and those who did not, to know the association between the two using Mann-Witney U Test.

Binary logistic regression was applied to understand the independent predictability of the various domains of quality of life with psychiatric morbidity. The difference in proportion was considered statistically significant whenever $P \le 0.05$. Quality of life domains having p-value

>0.25 on univariate analysis were considered for binary logistic regression analysis.

RESULTS

Mean age of the study subjects was found to be 17.6±1.154. Though the questionnaire was administered and interview was done to all 700 adolescents, 56 questionnaires had missing data in them and hence were discarded and the remaining 664 questionnaires were considered for further analysis and interpretation.

Overall prevalence of psychiatric morbidity was found to be 15.5%. Major depressive disorder (36.8%) was found to be the commonest. There were no cases of mania, agoraphobia, bulimia nervosa and anorexia nervosa found among the study subjects (Table 1).

There is a significant association between Overall quality of life, Psychological domain, level of independence, Social relations, Environmental domain and Spiritual domain and psychiatric morbidities (Table 2). Overall QOL (Adj OR-1.33;95% CI 1.224-1.468, p<0.01) was found to be independent predictor of psychiatric morbidity (Table 3).

Type of mental disorder	Frequency $(n = 664)$	Percentage (%)	95% CI
Depression	38	36.8	33.1 - 40.5
Dysthymia	11	10.6	8.3 - 12.9
Panic disorder	14	13.5	10.3 - 16.1
Obsessive compulsive disorder	7	6.7	4.8 - 8.6
Social phobia	15	14.5	11.8 - 17 2
Psychotic disorder	1	0.9	0.54 - 1.26
Post-traumatic stress disorder	10	9.7	7.4 - 11.9
Generalized anxiety disorder	7	6.7	4.8 - 8.6
Total	103	100	-

Table 1: Prevalence of psychiatric morbidity among study subjects.

Table 2: Association of psychiatric disorders with various domains of quality of life.

	Psychiatric morbidity				
Domains of Quality of life	Present		Absent	Absent	
	Median (IQR)	Range	Median (IQR)	Range	p-value
Overall quality of life	50(31.25-68.7)	75	67.2(56.2-75)	87.5	0.001
Physical domain	45.8(37.5-56.2)	54.1	47.9(41.6-56.25)	75.9	0.62
Psychological domain	51.2(42.5-60)	69.2	56.2(48.7-63.7)	76.3	0.001
Level of independence	67.1(59.3-70.3)	71.2	68.7(64-78.1)	72.8	0.001
**Social domain	59.3(43.7-71.8)	74	68.9(59.3-78.1)	93.5	0.001
Environment	52.34(40.62-61.7)	66.9	59.3(50.7-67.9)	70.2	0.001
Spiritual domain	56.25(37.5-75)	93.7	68.2(56.2-75)	78	0.001

^{*}Mann-Whitney U test; ** since it was perceived that questions related to sexual health in the social relationship domain of quality of life were not relevant to the study subjects in the present study, those questions were not included in the questionnaire. The remaining questions under the social domain were administered.

Table 3: Predictors of psy	vchiatric morbidities	among OOL domains.
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Variable	A dimetad adda	95% CI		* 1
Variable	Adjusted odds	Lower limit	Upper limit	*p-value
Overall quality of life	1.049	1.034	1.064	0.001
Physical domain	1.017	0.997	1.038	0.096
Psychological domain	1.006	0.986	1.026	0.590
Level of independence	1.015	0.998	1.044	0.073
Social relations	1.015	0.999	1.030	0.068
Environmental domain	1.001	0.978	1.025	0.913
Spiritual domain	1.004	0.991	1.017	0.556

^{*}Binary logistic regression

DISCUSSION

The overall prevalence of psychiatric disorders among the late adolescents using MINI KID questionnaire V.6 was found to be 15.5% (Table 1). Very few studies have been conducted to know the psychiatric morbidity, especially in late adolescents and in most of the studies this age group has been studied along with other age groups like the children less than 13 years or with the adults, hence comparison and interpretation regarding differences in the overall prevalence of psychiatric morbidity specific to this age group becomes difficult. However, if we consider the prevalence of psychiatric disorders in adolescent age group which ranges from 10-19 years, with the available studies (both done in India and other countries) it is seen that the prevalence of overall psychiatric morbidity ranges from 6.7% to 31.2%. 6-24 This difference in the prevalence can be attributed to the inherent nature of the psychiatric disorders, the existence of stigma due to which eliciting history becomes difficult, differences in diagnostic tools used, recall bias, differences in the definition that is used to define the cases and the differences in sampling methods. The difference can also be attributed to the varying age groups, and the inclusion of both sexes in most of the studies.

With respect to the association of quality of life with psychiatric disorders, significant association was seen between overall quality of life, psychological domain, of level independence, social relations, environmental domain and spiritual domain with psychiatric disorders (Table 2). On binary logistic regression, Overall quality of life was found to be an independent predictor of psychiatric morbidity (Table 3). Our study is unique for the reason that it is conducted on adolescent girls and the prevalence of all psychiatric morbidities were screened for, but since such studies are not available comparison with other studies becomes difficult. Here the comparison is done with the available literature. In Blay SL et al study WHOQOL BREF Questionnaire was used to assess quality of life and Selfreported questionnaire was used to estimate psychiatric morbidity.²⁵ In the study all domains of quality of life were found to be significant including the physical domain. In our study physical domain was not found to

be significantly associate with psychiatric morbidity. The reason for the difference may be that the study was conducted among the military personnel who are at a constant physical stress due to the daily training routine and adverse situations they face frequently as the part of their profession. There are several other studies which shows the findings similar to ours, which include study conducted by Spintzer RL et al which PRIME-MD tool to diagnose mental disorders, HRQL to assess the quality of life. 26 The study showed that with the presence of mental disorders there was substantial impairment in quality of life. Hollander E et al study conducted among the US population showed that people with Obsessive Compulsive disorder had significant impairment in Quality of life.²⁷ Douglas F et al study related to association of physical quality of life with PTSD showed that five out of six domains of were significantly associated with the outcome.²⁸ Henning ER study reported that individuals with GAD reported more impairment at work and in their social functioning than they did with home and family responsibilities.²⁹ They also reported lower quality of life than non-anxious controls, particularly in regard to self-esteem, goals and values, money, work, play, learning, creativity, friends, and relatives. Olantunji BO et al study showed that there was significant impairment in patients with anxiety disorders compared to controls especially with respect to mental and social domains.³⁰ The most affected anxiety disorder was PTSD. Norberg MM et al study showed that the comorbidity of anxiety disorders with depressive disorders had a negative impact on QOL.³¹ Barrera TL et al study showed that GAD, social phobia and panic attacks had impairment in QOL and there was further impairment with having depression as a comorbid condition.3

CONCLUSION

This study contributes to the research as in its attempt to explore the association between mental health's of adolescent girls with the quality of life. It covers four important issues of the present scenario least focused in the research till date i.e. late adolescence, girls, mental health and quality of life. Significant association of mental disorders with QOL necessitates LSBE (Life Skill Based Education), counseling services, mentorship program and health education at colleges.

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Institutional Ethics Committee

REFERENCES

- 1. WHO Adolescent development. WHO. Available from:http://www.who.int/maternal_child_adolescent / topics/ adolescence/ dev/ en/.
- Population reference bureau. The world's youth 2013 data sheet. Available from: http://www.prb.org/ pdf13/ youth-data-sheet-2013.
- 3. Census of India Website: Office of the registrar general and census commissioner, India. [cited 2014 Oct 11]. Available from: http://censusindia.gov.in/
- 4. Gore FM, Bloem PJ, Patton GC, Ferguson J, Joseph V, Coffey C, et al. Global burden of disease in young people aged 10-24 years: a systematic analysis. The Lancet. 2011;377 (9783):2093-102.
- 5. Srinath S, Girimaji SC, Gururaj G, Seshadri S, Subbakrishna DK, Bhola P, et al. Epidemiological study of child and adolescent psychiatric disorders in urban and rural areas of Bangalore, India. Indian J Med Res. 2005;122(1):67-79.
- 6. Ahmad A, Khalique N, Khan Z, Amir A. others. Prevalence of psychosocial problems among school going male adolescents. Indian Journal of Community Medicine. 2007;32(3):219.
- 7. Kumar G, Jain A, Hegde S. Prevalence of depression and its associated factors using Beck Depression Inventory among students of a medical college in Karnataka. Indian Journal of Psychiatry. 2012;54(3):223.
- 8. Muzammil K, Kishore S, Semwal J. Prevalence of psychosocial problems among adolescents in district Dehradun, Uttarakhand. Indian J Public Health. 2009;53(1):18-21.
- 9. Bansal PD, Barman R. Psychopathology of school going children in the age group of 10-15 years. Int J Appl Basic Med Res. 2011;1(1):43-7.
- Saraswathi N. A study on the prevalence of psychiatric disorders in Suttur village karnataka. The Rajiv Gandhi university of health sciences; 2011. Available at http://14.139.159.4:8080/ jspui/handle/ 123456789/ 6885
- 11. Manjunath R, Kulkarni P. Mental Health Status and Depression among Medical Students in Mysore, Karnataka-An Untouched Public Health Issue. Depression. 2013;4(1):50-3.
- Sharma I, Giri D, Dutta A, Mazumder P. Psychosocial factors in children and adolescents with conversion disorder. J Indian Assoc Child Adolesc Men Health 2005; 1:3
- 13. Nandi PS, Banerjee G, Mukherjee SP, Nandi S, Nandi DN. A study of psychiatric morbidity of the elderly population of the rural community in West Bengal. Indian J Psychiatry. 1997;39(2):122-9.

- Herman AA, Stein DJ, Seedat S, Heeringa SG, Moomal H, Williams DR. The South African Stress and Health (SASH) study: 12-month and lifetime prevalence of common mental disorders. SAMJ: South African Medical Journal. 2009;99(5):339-44.
- Meltzer H, Gatward R, Great Britain, Office for National Statistics, Social Survey Division. The mental health of children and adolescents in Great Britain: summary report. London: Office for National Statistics; 2000.
- 16. Nock MK, Green JG, Hwang I, McLaughlin KA, Sampson NA, Zaslavsky AM, et al. Prevalence, Correlates, and Treatment of Lifetime Suicidal Behavior Among Adolescents: Results From the National Comorbidity Survey Replication Adolescent Supplement. JAMA Psychiatry. 2013;70(3):300.
- 17. Epidemiology of mental disorders in children and adolescents. Available http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2807642/.
- McLaughlin KA, Costello EJ, Leblanc W, Sampson NA, Kessler RC. Socioeconomic Status and Adolescent Mental Disorders. American Journal of Public Health. 2012;102(9):1742-50.
- Roberts RE, Roberts CR, Xing Y. Comorbidity of Substance Use Disorders and Other Psychiatric Disorders Among Adolescents: Evidence from an Epidemiologic Survey. Drug Alcohol Depend. 2007;88 (Suppl 1):S4-13.
- 20. Abbo C, Kinyanda E, Kizza RB, Levin J, dyanabangi S, Stein DJ. Prevalence, comorbidity and predictors of anxiety disorders in children and adolescents in rural north-eastern Uganda. Child and adolescent psychiatry and mental health. 2013;7(1):21.
- 21. Sidhu TK. Evaluation of psychiatric morbidity in adolescents in Patiala District, Punjab. Indian Journal of Community Health. 2012;24(1):63-6.
- 22. Skapinakis P, Bellos S, Koupidis S, Grammatikopoulos I, Theodorakis PN, Mavreas V. Prevalence and socio-demographic associations of common mental disorders in a nationally representative sample of the general population of Greece. BMC psychiatry. 2013;13(1):163.
- 23. Jaju S, Al-Adawi S, Al-Kharusi H, Morsi M, Al-Riyami A. Prevalence and age-of-onset distributions of DSM IV mental disorders and their severity among school going Omani adolescents and youths: WMH-CIDI findings. Child and Adolescent Psychiatry and Mental Health. 2009;3(1):29.
- 24. Belfer ML. Child and adolescent mental health around the world: challenges for progress. Journal of Indian Association for Child and Adolescent Mental Health. 2005;1(1):3.
- 25. Blay SL, Marchesoni MSM. Association among physical, psychiatric and socioeconomic conditions and WHOQOL-Bref scores. Cadernos de Saúde Pública. 2011; 27(4):677-86.
- 26. Spitzer RL, Kroenke K, Linzer M, Hahn SR, Williams JB, deGruy FV 3rd, et al. Health-related

- quality of life in primary care patients with mental disorders: Results from the prime-md 1000 study. JAMA. 1995; 274(19):1511-7.
- 27. Zatzick DF, Marmar CR, Weiss DS, Browner WS, Metzler TJ, Golding JM, et al. Posttraumatic stress disorder and functioning and quality of life outcomes in a nationally representative sample of male Vietnam veterans. Am J Psychiatry. 1997;154(12):1690-5.
- 28. Hollander E, Kwon JH, Stein DJ, Broatch J, Rowland CT, Himelein CA. Obsessive-compulsive and spectrum disorders: overview and quality of life issues. J Clin Psychiatry. 1996;57 Suppl 8:3-6.
- 29. Henning ER, Turk CL, Mennin DS, Fresco DM, Heimberg RG. Impairment and quality of life in individuals with generalized anxiety disorder. Depress Anxiety. 2007; 24(5):342-9.

- 30. Olatunji B, Cisler J, Tolin D. Quality of life in the anxiety disorders: A meta-analytic review. Clinical Psychology Review. 2007;27(5):572-81.
- 31. Norberg M, Diefenbach G, Tolin D. Quality of life and anxiety and depressive disorder comorbidity. Journal of Anxiety Disorders. 2008;22(8):1516-22.
- 32. Barrera T, Norton P. Quality of life impairment in generalized anxiety disorder, social phobia, and panic disorder. Journal of Anxiety Disorders. 2009;23(8):1086-90.

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